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Subpart B—Test Procedures

§ 92.101 Applicability.

Provisions of this subpart apply to tests performed by the Administrator, certificate holders, other manufacturers and remanufacturers of locomotives or locomotive engines, railroads (and other owners and operators of locomotives), and their designated testing laboratories. This subpart contains gaseous emission test procedures, particulate emission test procedures, and smoke test procedures for locomotives and locomotive engines.

§ 92.102 Definitions and abbreviations.

The definitions and abbreviations of subpart A of this part apply to this subpart. The following definitions and abbreviations, as well as those found in § 92.132 (Calculations), also apply:

Accuracy means the difference between the measured value and the true value, where the true value is determined from NIST traceable measurements where possible, or otherwise determined by good engineering practice.

Calibration means the act of calibrating an analytical instrument using known standards.

Calibration gas means a gas of known concentration which is used to establish the response curve of an analyzer.

Good engineering practice means those methods and practices which the Administrator determines to be consistent with scientific and engineering principles.

Hang-up refers to the process of hydrocarbon molecules being adsorbed, condensed, or by any other method removed from the sample flow prior to reaching the instrument detector. It also refers to any subsequent desorption of the molecules into the sample flow when they are assumed to be absent.

Parts per million, carbon or *ppmC* means the concentration of an organic compound in a gas expressed as parts per million (by volume or by moles) multiplied by the number of carbon atoms in a molecule of that compound.

Precision means the standard deviation of replicated measurements, or one-half of the readability, whichever is greater; except where explicitly noted otherwise.

Readability means the smallest difference in measured values that can be detected. For example, the readability for a digital display with two decimal places would be 0.01.

Span gas means a gas of known concentration which is used routinely to set the output level of an analyzer.

Standard conditions and *standard temperature and pressure* mean 68 °F (20 °C) and 29.92 in Hg. (101.3 kPa).

§ 92.103 Test procedures; overview.

(a) This subpart contains procedures for exhaust emission tests of locomotives and locomotive engines. The procedures specified here are intended to measure brake-specific mass emissions of organic compounds (hydrocarbons for locomotives using petroleum diesel fuel), oxides of nitrogen, particulates, carbon monoxide, carbon dioxide, and smoke in a manner representative of a typical operating cycle.

(b)(1) The sampling systems specified in this subpart are intended to collect representative samples for analysis, and minimize losses of all analytes.

(i) For gaseous emissions, a sample of the raw exhaust is collected directly from the exhaust stream and analyzed during each throttle setting.

(ii) Particulates are collected on filters following dilution with ambient air of a separate raw exhaust sample.

(2) Analytical equipment is identical for all fuel types, with the exception of the systems used to measure organics (*i.e.*, hydrocarbons, alcohols, and aldehydes); diesel-fueled and biodiesel-fueled locomotives *Parts per million* and locomotive engines require a heated, continuous hydrocarbon detector; natural gas-fueled locomotives and locomotive engines require a continuous hydrocarbon detector and a methane detector; alcohol-fueled locomotives and locomotive engines require a heated hydrocarbon detector, alcohol sampling and detection systems, and aldehyde sampling and detection systems. Necessary equipment and specifications appear in §§ 92.105 through 92.111.

(3) Fuel specifications for emission testing are specified in § 92.113. Analytical gases are specified in § 92.112.